Rock Island Arsenal Success Stories

COL Bruce Elliott, Commander

www.ria.army.mil

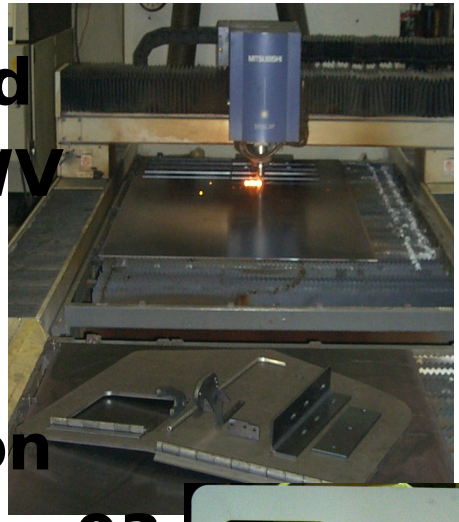
Introduction

The Rock Island Arsenal (RIA) is one of the world's largest weapons manufacturing facilities and the only active foundry left in the Department of Army. From engineering and design, to prototyping, to full production and assembly, RIA is fully capable of providing the finest weapons parts and equipment for our nation's Joint war fighters. The Arsenal is rich in history, having produced weapons for the American military since the late 1800s. The first American-built tank was produced here shortly after World War I. Today, the Arsenal continues its tradition of quality and excellence by producing a wide array of products for the joint services. The Arsenal's manufacturing facility is state-of-the-art and is able to take on almost any challenge given by its customers. The Arsenal excels in responding to

RIA product will protect the Warfighter in OIF

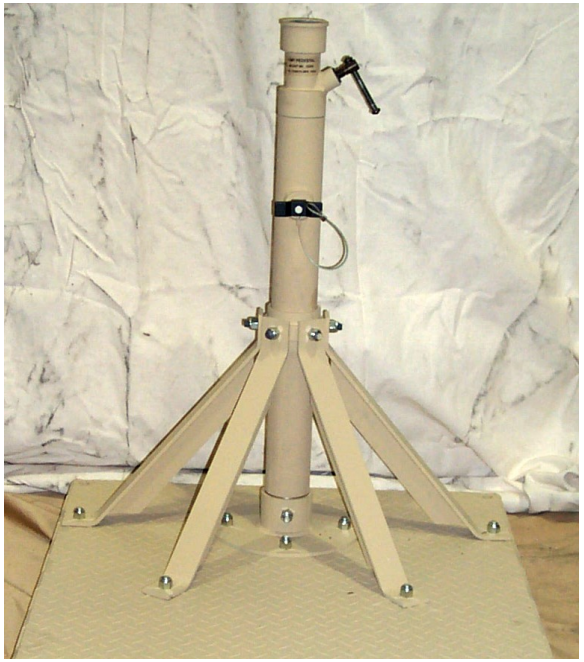
HMMWV Armor Door Kits

- Joint Warfighters' urgent need
- Ballistic protection for HMMWV occupants
- 2-door and 4-door kits
- RIA response – 24/7 production
- First delivery in 6 weeks – Dec. 03



RIA product serving the Warfighter in OIF

M6 Weapon Stand



- Urgent Warfighter requirement
- Weapon stand for mounting small arms to HMMWV
- Funded order for 1,000 ea
- Completed in Dec. 2003 ahead of Schedule
- User: US Armed Forces

RIA product serving the Warfighter in OIF

M7 Forward Repair System

- **Designed and built at RIA from Perfor**
  Specification
- **Produced/tested 5 systems Dec 98 – N**
- **Roll out ceremony Aug 2000**
- **First Unit Equipped Oct 2000 - 4th ID**
- **Customer: PM Heavy Tactical Vehicles**
- **Produced and delivered 153 to date**
- **Projected orders thru FY10**

FRS Performing Bradley Repairs in Iraq

lission: Repair Battle Damaged
eavy Combat Systems“On site”
o thru the Direct Support Level
Prime Mover for the:
Heavy Div – PLS
SBCT – HEMTT-LHS

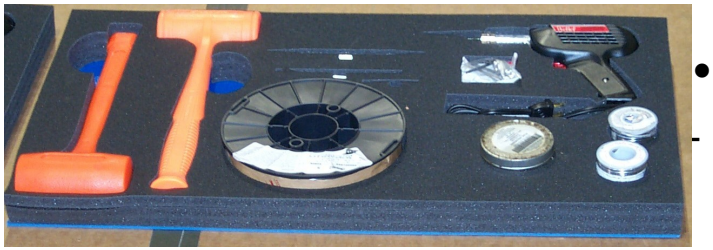
STRYKER BRIGADE

RIA product serving the Warfighter in OIF

Contact Maintenance Truck Heavy CMTH

- **Production start - FY95**
- **User: US Army, USAR, USMC, NG, FMS, C**
- **Customer: TACOM RI**
- **Produced and delivered 1090 to date**
- **265 projected thru FY05**

Mission: Repair Battle Damaged Equipment “On Site”

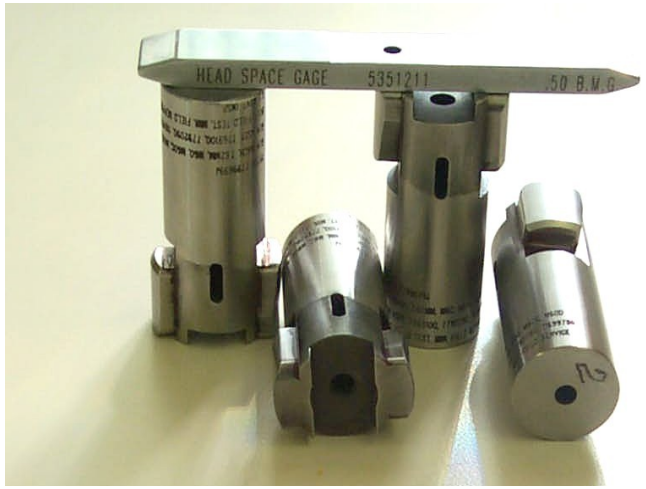


- Base Vehicle
  - M1097 HMMWV
  - M1113 HMMWV

Industrial Grade Hand Tools

RIA product serving the Warfighter in OIF

Field Service Gages



- RIA makes a variety of precision Small Arms Gages
  - Gages may have tolerances of +/ - .00002”
- User: US Armed Forces, FMS
- Customer: TACOM RI
- Performing to 3rd Multi-year Memorandum of Agreement

RIA product serving the Warfighter in OIF

Explosive Ordnance Disposal Vehicle EOD

- **Produced Prototype in 1 month – Apr 99**
- **User: US Army, USAR**
- **Customer: TACOM RI**
- **Produced/delivered 254 to date**
- **103 Ea projected thru FY05**

Mission: Explosive Ordnance Disposal

Base Vehicle: M1097 HMMWV

Replaces

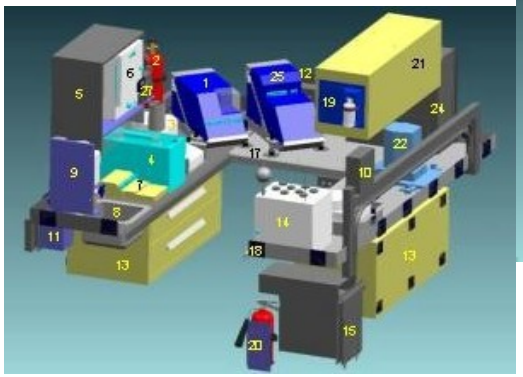
Petroleum Quality Analysis System (PQAS

neering and Manufacturing Demonstration Prototype

PQAS Project Manager PM-PAWS

System Description

- State of the art lab
- CPU integrated data acquisition instruments for fuel analysis
- Environment controlled lightweight expandable shelter mounted on HMMWV
- Diesel and aviation fuel tested by one 77L soldier
- Transportable by C-130 or externally transported by CH-47



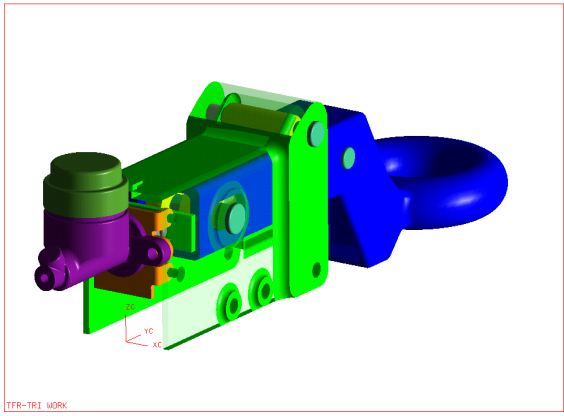
Rock Island Arsenal

- Specification Development
- Contract Administration
- Human Factors Engineering
- Laboratory Methods & Procedures
- Prototype Design/Fabrication
- DT/OT Support
- Logistics Coordination
- Production Integration & Assembly

RIA product serving the Warfighter in OIF

Surge Brake Actuator Kits

- RIA designed and built Surge Brake to retrofit 6,700 deadlined High Mobility Trailers
- RIA design passed durability test without issue
- Very difficult castings to produce (thin ¼” cross section)
- User: US Armed Forces
- Customer: PM Light Tactical Vehicles
- Produced/delivered over 7,200 to date



M37 Recoil Mechanism

RIA products serving the Warfighter in OIF

M102 105mm Towed

M119 105mm Towed Howitzer

Fielded Systems Support

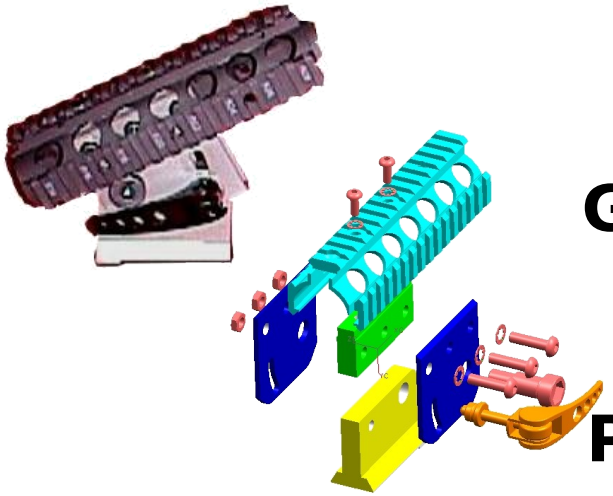
- Towed Howitzers
  - **Spare and repair parts**
  - **Upgrade services**
  - **USMC Recoil Overhaul**
  - **Overhaul part**

M198 155mm Towed Howitzer

RIA product serving the Warfighter in OIF

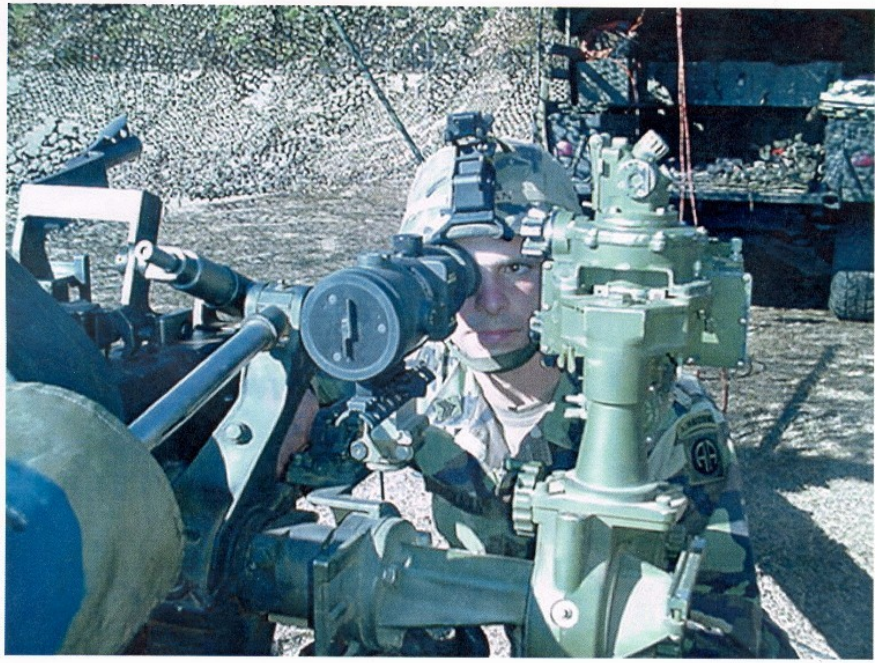
Gun Electronic Laying Optic Night Sight

GELONS



GELONS + M119 Howitzer = Worlds Most Powerful "Sniper Rifle"

- **Soldier's model adopted small arms night vision & fire control optics to M119**
- **RIA's Engineering Services provided ergonomic and product design**
- **Engineering was concurrent with in-house prototype production**
- **First six sights produced in one week**
- **Direct fire accuracy at night better than daylight**
- **10 rounds at 1,000m. in 2m diameter pattern**



M110 SP Howitzer–M174 Gun Mount

M1 ABRAMS Main Battle Tank – M256 Gun Mount

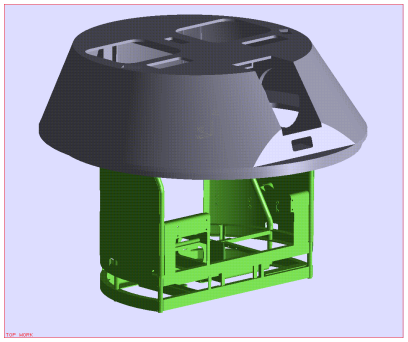
RIA products serving the Warfighter in OIF

Fielded Systems Support

- Gun Mounts
  - **New Build**
  - **Spare and repair parts**
  - **Upgrade services**
  - **Overhaul part support**
  - **Replenishment**

M109 Paladin – M182 Gun

RIA product used in training the Warfighter for OIF



Opposing Forces Surrogate Training System
Main Battle Tank

- RIA began production of the Turret and Basket in 1998
- Aluminum construction challenging to weld and machine
- User: National Training Center/Joint Readiness Training Center
- Simulates Main Battle Tank
- M113A3 Chassis/Bradley Turret Components
- Maintains M113 Driver/Bradley Commander & Gunner Skills
- Replaces Current M551 BMP Fleet
- Reduces O&S Costs/ Environment Impact
- Customer: United Defense Limited Partners
- Production of 41 Units by Feb 05

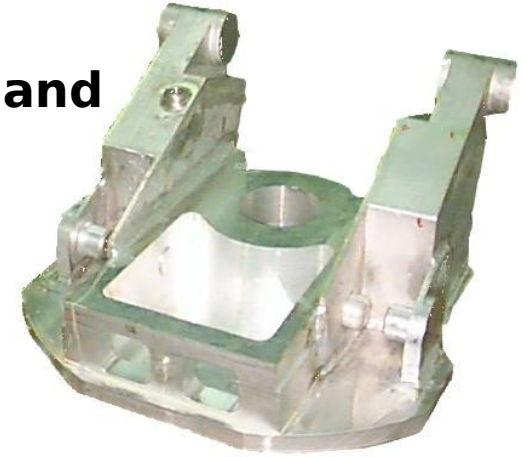
RIA product serving the Warfighter in OIF

AC-130H SPECTRE GUNSHIP

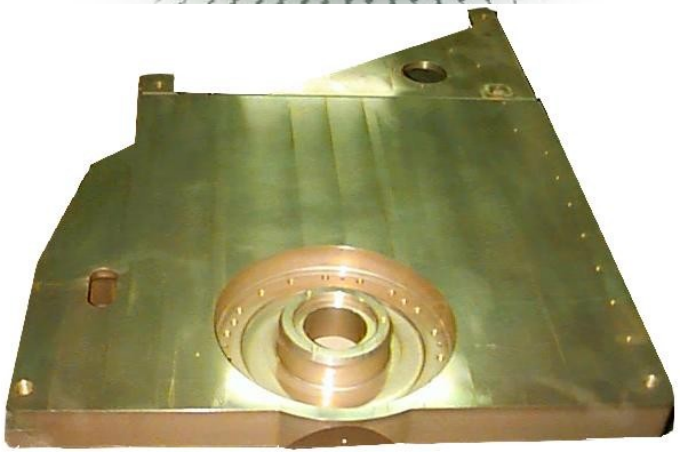
LIGHT WEIGHT GUN MOUNTS

Machined aluminum redesign by Rock Island Arsenal of original welded steel gun mount:

Saved 1,000 lb. per aircraft
Significant weld reduction
Greatly reduced part count
Aerospace Quality Assurance



105 mm YOKE



105 mm PALLET

Disciplines and Technologies used in proje

- Product, Producibility & Reverse Engineering
- CAE – Computer Aided Engineering
- FEA – Finite Element (stress) Analysis
- CAD – Computer Aided Drafting & Solid Modelir
- RP - Rapid Prototyping
- CAM - Computer Aided Manufacturing
- CNC - Computer Numerical Control machining & inspection

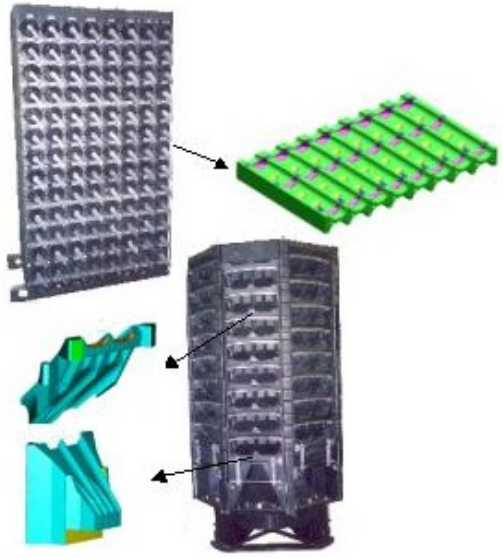
RIA product serving the Warfighter in OIF

AC-130H SPECTOR GUNSHIP

LIGHT WEIGHT AMMUNITION RACKS

- Designed, developed, and manufactured by RIA for SOCOM
- Rotational molded hollow plastic parts which can be reinforced with metal
- Leading edge technology development
- Saved 1,000 lbs

- Improved function
- Low tooling and part cost
- Durable – impact and temperature resistant



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